

# **SHOE SOLE HAVING HEEL CUSHIONING MEMBER**

## **BACKGROUND OF THE INVENTION**

### 1. Field of the Invention

The present invention relates to a shoe sole, and more  
5 particularly to a shoe sole having a resilient cushioning device for the heel portion thereof.

### 2. Description of the Prior Art

Typical shoe soles may comprise one or more bladders or air  
chambers formed in the shoe soles, to increase the resilience of the  
10 shoe soles, and to resiliently support the heel portions of the users.

However, the bladders or the air chambers formed in the shoe  
soles may not be used to effectively cushion the heel portions of the  
users.

The present invention has arisen to mitigate and/or obviate the  
15 afore-described disadvantages of the conventional shoe soles.

## **SUMMARY OF THE INVENTION**

The primary objective of the present invention is to provide a  
shoe sole including a resilient cushioning device for attaching to the  
heel portion thereof to effectively cushion the heel portions of the  
20 users, and thus to comfortably support the heel portions of the users.

In accordance with one aspect of the invention, there is  
provided a shoe sole comprising a heel portion and a front portion,  
and a resilient cushioning device engaged in the heel portion of the  
shoe sole for cushioning heel portions of users, the resilient  
25 cushioning device including a lower frame member, and an upper  
frame member supported above the lower frame member, and  
suspended in the shoe sole, to provide a resilience to cushion and

support the heel portions of the users.

The lower and the upper frame members include an intermediate portion coupled together with such as a stay.

A resilient member may further be provided and engaged  
5 between rear portions of the lower frame member and the upper frame member, to cushion the rear portion of the lower frame member. Another resilient member may further be provided and engaged between front portions of the lower frame member and the upper frame member, to cushion the front portion of the upper frame  
10 member.

The lower frame member includes a rear portion having a U-shaped structure, and the lower frame member may include a front portion having a flat planar structure. The upper frame member includes a rear portion having a O-shaped structure, and the  
15 upper frame member may include a front portion having a flat planar structure. The upper frame member includes a front portion having an opening formed therein.

Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description  
20 provided hereinbelow, with appropriate reference to the accompanying drawings.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a side schematic view of a shoe sole in accordance with the present invention;

25 FIG. 2 is a top plan view of a resilient cushioning device for the shoe sole;

FIG. 3 is a bottom plan view of the resilient cushioning device

for the shoe sole;

FIG. 4 is a rear perspective view of the resilient cushioning device for the shoe sole; and

FIG. 5 is a rear perspective view similar to FIG. 4, having  
5 dotted lines to show an inner structure of the resilient cushioning device for the shoe sole.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to the drawings, and initially to FIG. 1, a shoe sole  
10 in accordance with the present invention comprises a rear or heel  
10 portion 11 for supporting heel portions of users, a front portion 12  
for supporting front foot portions of the users, and a resilient  
cushioning device 20 attached or engaged in the heel portion 11 of  
the shoe sole 10 to effectively cushion the heel portions of the users.

The resilient cushioning device 20 may be engaged into the  
15 heel portion 11 of the shoe sole 10 while molding the shoe sole 10,  
and includes two frame members 30, 40 arranged cross to each other,  
in order to form a substantially I or Z-shape structure (FIGS. 1, 4, 5)  
as seen from the side portion of the resilient cushioning device 20.

The first or the lower frame member 30 is located below the  
20 other or the upper frame member 40. Each of the frame members 30,  
40 includes a rear portion 31, 41, a front portion 32, 42, and an  
intermediate portion 33, 43; in which the intermediate portions 33,  
43 of the frame members 30, 40 are coupled or secured together by  
such as molding or extruding or mold injection processes, so as to  
25 form the Z-shape structure (FIGS. 1, 4, 5).

For example, the intermediate portions 33, 43 of the frame  
members 30, 40 are coupled or secured together by a stay 47 that

may also be formed integral with the frame members 30, 40 with such as the molding or extruding or mold injection processes, in order to resiliently support the upper frame member 40 above the lower frame member 30.

5       The rear portion 31 of the lower frame member 30 includes a substantially U-shaped structure (FIG. 3), and the front portion 32 of the lower frame member 30 includes a substantially flat planar structure. The rear portion 41 of the upper frame member 40 includes a substantially O-shaped structure (FIG. 2), and the front  
10       portion 42 of the upper frame member 40 also includes a substantially flat planar structure having an opening 44 formed therein.

As shown in the drawing figures, the front portion 42 of the upper frame member 40 is preferably slightly shorter than the front  
15       portion 32 of the lower frame member 30. The frame members 30, 40 may be engaged into the heel portion 11 of the shoe sole 10 while molding the shoe sole 10.

In operation, as shown in FIG. 1, due to the engagement or the molding of the frame members 30, 40 within the heel portion 11 of  
20       the shoe sole 10, and due to the resilient support of the upper frame member 40 above the lower frame member 30, the upper frame member 40 may be suspended in the shoe sole 10 and may thus include a suspending structure, and may thus include a suitable resilience to cushion and to comfortably support the heel portions of  
25       the users.

The resilient cushioning device 20 may further include a bladder or a resilient member 50 engaged between the rear portions

31, 41 of the two frame members 30, 40, and/or another bladder or resilient member 60 engaged between the front portions 32, 42 of the two frame members 30, 40, to further provide a cushioning force between the two frame members 30, 40, and thus to further cushion  
5 and comfortably support the heel portions of the users.

Accordingly, the shoe sole in accordance with the present invention includes a resilient cushioning device for attaching to the heel portion thereof to effectively cushion the heel portions of the users, and thus to comfortably support the heel portions of the users.

10 Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from  
15 the spirit and scope of the invention as hereinafter claimed.